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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,092

06/29/2005

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SON-2903

4260

23353 7590 04/30/2008  
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EXAMINER

CHOW, YUK

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

04/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/541,092	<b>Applicant(s)</b> TOYOZAWA ET AL.	
	<b>Examiner</b> YUK CHOW	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because it has more than 150 words.

Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 4 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2 and 3 of co-pending U.S. Patent application No. 10/542,503. Although the conflicting claims are not identical, they are not patentably distinct from each other for the reason below.

Claim 4 of Current Application No. 10/541,092	Claims 2 and 3 of U.S. Patent Application No. 10/542,503
<b>Claim 1:</b> <b>A display device</b> used as a display part of an electronic device capable of switching between a normal power consumption state and a low power consumption state, operating according to display data and power supply voltage supplied from a side of the electronic device proper, and formed by a panel in which a display area and a peripheral circuit part for driving the display area are integrally formed in an integrated manner on an insulating substrate, said display device characterized in that:	<b>Claim 2:</b> <b>A display apparatus</b> that is used as a display component of an electronic device capable of switching between a normal power consumption state and a low power consumption state and that comprises a panel in which a display area and a peripheral circuit section for driving the display area are integrally formed on an insulating substrate, wherein
said panel can <b>switch between</b> an operational mode and a standby mode according to the switching of the side of the electronic device proper between the normal power consumption state and the low power consumption state;	said circuit section can <b>switch between</b> an operation mode and a waiting mode in response to the switching between the normal power consumption state and the low power consumption state of a main body of the electronic device,
in the <b>operational mode</b> , the panel operates while supplied with the power supply voltage from the side of the electronic device proper, and makes a	said circuit section comprises standby control means that operates by receiving power supply voltage from the main body of the electronic device and drives the display

desired display by driving the display area;	area to show a desired image in the <b>operation mode</b> , and
in the <b>standby mode</b> , the panel has standby control means for stopping the driving of the display area and inactivating the circuit part to reduce <b>power consumption</b> of the panel while the panel remains in a state of being supplied with the power supply voltage from the side of the electronic device proper;	while receiving the power supply voltage from the main body of the electronic device, stops driving the display area and inactivates the circuit section to suppress <b>power consumption</b> of the panel in the <b>waiting mode</b> , and said standby control means executes a control sequence to shut off direct current components flowing through resistive elements at least included in the circuit section during the inactivation, and wherein
said display area comprises pixel electrodes arranged in a form of a <b>matrix</b> , a <b>common electrode</b> opposed to the pixel electrodes, and an <b>electrooptic material</b> retained between the pixel electrodes and the common electrode; and	said display area comprises pixel electrodes arranged as a <b>matrix</b> , <b>common electrodes</b> opposing to the pixel electrodes, and an <b>electro-optic material</b> held between the pixel and common electrodes,
said <b>circuit part</b> comprises; a driver for <b>writing a signal voltage</b> to a side of the pixel electrodes according to the display data supplied from the side of the electronic device proper, a common driver for applying a common voltage to a side of the common electrode,	said <b>circuit section</b> comprises drivers for <b>writing signal voltage</b> to the pixel electrodes, a common driver for applying a common voltage to the common electrodes, and an offset circuit for adjusting a level of the common voltage relative to the signal voltage, and
an <b>offset circuit</b> having a coupling capacitor for generating a predetermined offset voltage to adjust a level of the common voltage with respect to the signal voltage, and	said standby control means executes a control sequence to shut off direct current components flowing through resistive elements included in the <b>offset circuit</b> during the inactivation.
a <b>start circuit for pre-charging</b> the coupling capacitor of the offset circuit to an offset voltage in advance when a return is made from the standby mode to the operational mode, and discharging the coupling capacitor when a transition is made from the operational mode to the standby mode.	<b>Claim 3:</b> The display apparatus according to claim 2, wherein said circuit section comprises a <b>start circuit for charging the offset circuit</b> so as to apply the common voltage quickly upon activation of the panel in addition to the common driver for applying the common voltage to the common electrodes and the offset circuit for adjusting the level of the common voltage,

Regarding the comparison above, claim 4 of current application is not patentably distinct from claims 2 and 3 of the co-pending US patent application (**10/542,503**). For instant, both application claims a star circuit for charging the offset circuit, despite the different wordings were used, it is obvious to one of ordinary skilled in the art at time of invention was made to realize the both circuits have a same function, and that is for adjusting the level of the common voltage.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**5. Claims 1-3, 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Maekawa et al. (US Patent 6,313,819).**

As to **claim 1**, AAPA discloses a display device used as a display part of an electronic device, operating according to display data and power supply voltage supplied from a side of the electronic device proper, and formed by a panel in which a display area and a peripheral circuit part for driving the display area are integrally formed in an integrated manner on an insulating substrate, said display device characterized in that:

said display area comprises pixel electrodes arranged in a form of a matrix, a common electrode opposed to the pixel electrodes, and an electro-optic material retained between the pixel electrodes and the common electrode [0003]; and

said circuit part comprises;

a driver for writing a signal voltage to a side of the pixel electrodes according to the display data [0002],

a common driver for applying a common voltage to a side of the common electrode [0002],

an offset circuit having a coupling capacitor for generating a predetermined offset voltage to adjust a level of the common voltage with respect to the signal voltage ([0003]-[0004]).

However, AAPA does not teach a start circuit for pre-charging the coupling capacitor of the offset circuit to an offset voltage at a time of a rising edge of the power supply voltage, and discharging the coupling capacitor at a time of a falling edge of the power supply voltage.

Maekawa discloses a liquid crystal display device wherein teaches a start circuit (Fig. 2) for pre-charging the coupling capacitor (Fig. 2(13)) at a time of rising edge of power supply voltage, and discharging at falling edge (see Fig. 3, Vin and Gate Potential, when Vin falls at T1, Gate Potential is falling due to coupling capacitor discharging, and Vin rises coupling capacitor is charging).

It would have been obvious to one ordinary skill in the art at time of invention was made to include a start circuit as in Maekawa into a display device of AAPA, because the variations in output potential can be reduced in a plurality of circuits are lined up together, therefore circuit complexity can reduced (see Col. 2 lines 38-47).

As to **claim 2**, AAPA and Maekawa disclose a display device as claimed in claim 1, characterized in that:

the display area and the peripheral circuit part for driving the display area in said panel comprise thin film transistors formed on a common insulating substrate by an identical process (see AAPA [0002]); and

said common driver, said offset circuit, and said start circuit are mounted on the common insulating substrate except for the coupling capacitor (see AAPA [0003]-[0005]).

As to **claim 3**, AAPA and Maekawa disclose a display device as claimed in claim 1, characterized in that:

said start circuit operates only at the time of the rising edge of the power supply voltage and at the time of the falling edge of the power supply voltage, and it is in a non-operational state during other times (see Maekawa Co. 3 lines 46-64, start circuit only operate during a precharge period, Fig. 3(T1)).

As to **claim 7**, AAPA discloses a display device comprising:  
a circuit part having a coupling capacitor within an offset circuit,  
wherein said coupling capacitor is adapted to generate a predetermined offset voltage to adjust a level of a common voltage with respect to a signal voltage (See AAPA [0003]-[0004]).

However, AAPA does not teach a start circuit for pre-charging the coupling capacitor.



Maekawa discloses a liquid crystal display device wherein teaches a start circuit (Fig. 2) for pre-charging the coupling capacitor (Fig. 2(13)) at a time of rising edge of power supply voltage (see Fig. 3, Vin and Gate Potential, when Vin rises at T1, Gate Potential is rising).

It would have been obvious to one ordinary skill in the art at time of invention was made to include a start circuit as in Maekawa into a display device of AAPA, because the variations in output potential can be reduced in a plurality of circuits are lined up together (see Col. 2 lines 38-47).

As to **claim 8**, AAPA and Maekawa disclose a display device as claimed in claim 7, wherein said a start circuit is adapted discharge said coupling capacitor at a time of a falling edge of said power supply voltage (see Fig. 3, Vin and Gate Potential, when Vin falls at T1, Gate Potential is falling due to coupling capacitor discharging).

As to **claim 9**, AAPA and Maekawa disclose a display device as claimed in claim 7, further comprising:

pixel electrodes arranged in a form of a matrix, said common electrode being opposed to said pixel electrodes (AAPA [0002]); and

an electro-optic material retained between said pixel electrodes and said common electrode (AAPA [0002]).

As to claim **10**, AAPA and Maekawa disclose a display device as claimed in claim 9, further comprising:

a driver adapted to write a signal voltage to a side of said pixel electrodes according to display data (AAPA [0002]).

As to claim **11**, AAPA and Maekawa disclose a display device as claimed in claim 7, wherein a display area and a peripheral circuit part for driving said display area are on an insulating substrate (AAPA [0002]).

As to claim **12**, AAPA and Maekawa disclose a display device as claimed in claim 7, wherein said common driver, said offset circuit, and said start circuit are mounted on a common insulating substrate except for said coupling capacitor (AAPA [0003]).

As to claim **13**, AAPA and Maekawa disclose a display device as claimed in claim 7, wherein said start circuit operates only at the time of the rising edge of the power supply voltage and at the time of the falling edge of the power supply voltage, and it is in a non-operational state during other times (see Maekawa Co. 3 lines 46-64, start circuit only operate during a precharge period, Fig. 3(T1)).

**6. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ling et al. (US Patent 6,091,391) in view of Maekawa et al. (US Patent 6,313,819).**

As to **claim 4**, Ling discloses a display device used as a display part of an electronic device capable of switching between a normal power consumption state and a low power consumption state, operating according to display data and power supply voltage supplied from a side of the electronic device proper, and formed by a panel in which a display area and a peripheral circuit part for driving the display area are integrally formed in an integrated manner on an insulating substrate, said display device characterized in that:

said panel can switch between (Fig. 2(210)) an operational mode and a standby mode according to the switching of the side of the electronic device proper between the normal power consumption state and the low power consumption state (see abstract);

in the operational mode, the panel operates while supplied with the power supply voltage from the side of the electronic device proper, and makes a desired display by driving the display area (EXECUTE cycle Col. 3 lines 11-18);

in the standby mode, the panel has standby control means for stopping the driving of the display area and inactivating the circuit part to reduce power consumption of the panel while the panel remains in a state of being supplied with the power supply voltage from the side of the electronic device proper (IDLE cycle Col. 3 lines 19-31);

said display area comprises pixel electrodes arranged in a form of a matrix, a common electrode opposed to the pixel electrodes (Fig. 2(140) and Fig. 2(150)), and an electrooptic material retained between the pixel electrodes and the common electrode (See Col. 2 lines 43-64); and

said circuit part comprises;

a driver (Fig. 2(100)) for writing a signal voltage to a side of the pixel electrodes according to the display data supplied from the side of the electronic device proper,

a common driver for applying a common voltage to a side of the common electrode (Fig. 2(Vdd)),

an offset circuit (Fig. 2(190)) having a coupling capacitor for generating a predetermined offset voltage to adjust a level of the common voltage with respect to the signal voltage (See Col. 2 lines 43-64), and

However, Ling does not teach a start circuit for pre-charging the coupling capacitor of the offset circuit to an offset voltage at a time of a rising edge of the power supply voltage, and discharging the coupling capacitor at a time of a falling edge of the power supply voltage.

Maekawa discloses a liquid crystal display device wherein teaches a start circuit (Fig. 2) for pre-charging the coupling capacitor (Fig. 2(13)) at a time of rising edge of power supply voltage, and discharging at falling edge (see Fig. 3, Vin and Gate Potential, when Vin falls at T1, Gate Potential is falling due to coupling capacitor discharging, and Vin rises coupling capacitor is charging).

It would have been obvious to one ordinary skill in the art at time of invention was made to include a start circuit as in Maekawa into a display device of Ling, because the variations in output potential can be reduced in a plurality of circuits are lined up together, therefore circuit complexity can reduced (see Maekawa Col. 2 lines 38-47).

As to **claim 5**, Maekawa and Ling disclose a display device as claimed in claim 4, characterized in that:

the display area and the peripheral circuit part for driving the display area in said panel comprise thin film transistors formed on a common insulating substrate by an identical process (see Maekawa Col. 4 lines 16-31); and

said common driver, said offset circuit, and said start circuit are mounted on the common insulating substrate except for the coupling capacitor (see Maekawa Col. 4 lines 32-48).

As to **claim 6**, Maekawa and Ling disclose a display device as claimed in claim 4, characterized in that:

said start circuit operates only when the return is made from the standby mode to the operational mode and when the transition is made from the operational mode to the standby mode, and it is in a non-operational state during other times (see Maekawa Co. 3 lines 46-64, start circuit only operate during a precharge period, Fig. 3(T1)).

**7. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Maekawa et al. (US Patent 6,313,819) in further view of Ling et al. (US Patent 6,091,391).**

As to **claim 14**, AAPA and Maekawa disclose a display device as claimed in claim 7.

However AAPA and Maekawa does not teach panel can switch between an operational mode and a standby mode according to the switching of the side of the electronic device proper between the normal power consumption state and the low power consumption state.

Ling discloses a circuit for LCD which can reduce current consumption, wherein teaches a circuit capable of switching between Execute cycle and IDLE cycle (see Col. 3 lines 11-31).

It would have been obvious to one ordinary skill in the art at time of invention was made to include a switch circuit as in Ling into display device of AAPA and Maekawa, because this enable reducing power consumption in idle mode (see Ling abstract).

As to **claim 15**, Ling discloses a display device as claimed in claim 14, wherein, in the operational mode, the panel operates while supplied with the power supply voltage from the side of the electronic device proper, and makes a desired display by driving the display area (see Ling Col. 2 lines 43-64).

As to **claim 16**, Ling discloses a display device as claimed in claim 14, wherein, in the standby mode, the panel has standby control means for stopping the driving of the display area and inactivating the circuit part to reduce power consumption of the panel while the panel remains in a state of being supplied with the power supply voltage from the side of the electronic device proper (See Ling Col. 3 lines 19-41).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YUK CHOW whose telephone number is (571)270-1544. The examiner can normally be reached on 8-6 M-TH E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/YUK CHOW/  
Examiner, Art Unit 2629

/Amare Mengistu/  
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